

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 January 2001 (11.01.2001)

PCT

(10) International Publication Number
WO 01/02972 A1

(51) International Patent Classification⁷: **G06F 15/16,**
H04L 12/56

(21) International Application Number: PCT/AU00/00796

(22) International Filing Date: 30 June 2000 (30.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PQ 1286 30 June 1999 (30.06.1999) AU

(71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET LM ERICSSON** [SE/SE]; Telefonplan, S-126 25 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **O'BRIEN, Fergus**

[AU/AU]; 110 Victoria Street, Melbourne, VIC 3000 (AU). **ROUGHAN, Matthew** [AU/AU]; 253 Pigdon Street, North Carlton, VIC 3054 (AU).

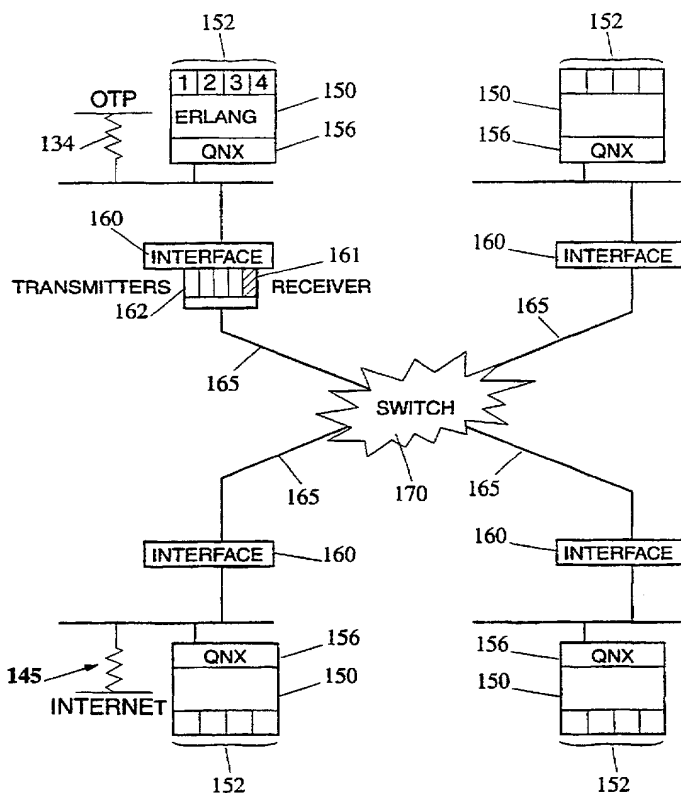
(74) Agent: **WATERMARK PATENT & TRADEMARK ATTORNEYS**; 290 Burwood Road, Hawthorn, VIC 3122 (AU).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: A SCALABLE COMPUTER SYSTEM



(57) Abstract: The present invention utilizes a "small-world" network architecture, in which a relatively small number of random cross-links of nodes or vertices in a network can result in small characteristic path lengths, for the transfer of messages between nodes or vertices in a telecommunications/computer network regardless of their location. The "small world" principle is usually considered to apply to many biological and social networks, as these systems generally exhibit properties that are not completely regular or completely random but somewhere in between. The present invention applies this small world principle to telecommunications/computer networks.

108221 24E0001

WO 01/02972 A1